

## REMARKS

Claims 1- 16, 20 and new dependent claim 21 are the only active claims pending in this application. The foregoing separate sheets marked as "Listing of Claims" shows all the claims in the application, each with an indication at its first line showing the claim's current status.

### I. Claim Objections

The Office Action objects to claim 13 for informalities in reciting "wavelength determining means." Office Action at p. 2.

Applicant respectfully responds that claim 13 as amended removes the subject informalities.

Applicant therefore respectfully requests the objection be reconsidered and withdrawn.

### II. Claim Rejections – 35 U.S.C. § 102

The Office Action rejects claims 1, 3, 8, 10, 13, 15 and 20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Publication No. US 2001/0004290 ("Lee"). Office Action at pp. 2-5.

Applicant respectfully traverses the rejections.

Applicant has amended the original claims for form and clarity, without disclaimer of subject matter, and Applicant refers to the amended claim language in these remarks without waiver of Applicant's traversal of the rejections of the claims as originally worded.

Applicant's base claims 1 and 13 define a system in which a plurality of remote apparatuses "communicate using a given plurality of wavelengths," the system having, in combination with other elements, a wavelength separating means, an optical receiving means, a wavelength control means and an optical transmitting means.

The claim 1 and 13 wavelength separating means recites receiving an optical signal having a plurality of wavelengths and separates these into separated optical signals.

The claim 1 and 13 optical receiving means recites, based on the separated optical signals, generating and outputting “a reception status signal indicating whether or not each of the given plurality of wavelengths used in the” system is being received. Claim 1, currently amended, at lines 7-12; claim 13, currently amended, at lines 6-10.

The claim 1 and 13 wavelength control means recites determining, on the basis of the reception status signal from the optical receiving means, “an available wavelength as a transmission and reception signal.” Claim 1, currently amended, at lines 13-15; claim 13, currently amended, at lines 12-14.

The claim 1 and 13 optical transmitting means, based on the available wavelength determined by the wavelength control means, transmits an optical signal of that available wavelength. Claim 1, currently amended, at lines 17-18; claim 13, currently amended, at lines 16-17.

Examples of the functions recited by the claim 1 and claim 13 wavelength separating means, optical receiving means, wavelength control means and optical transmitting means are disclosed by the specification and drawings. *See*, for example, Specification at p. 9, line 14 through p. 10, line 11.

As described, the combination of elements recited by claims 1 and 13 provides remote apparatuses having automatic frequency selection to avoid collisions. As further described, this provides *automatic* frequency allocation - performed by the remote apparatuses within the system – thereby removing the need for the station to perform channel allocation. *See, e.g.*, Specification at p. 5, lines 3-11; at p. 7, lines 24 -28, and at p. 9, line 14 through p. 10, line 11.

Applicant's method claim 20 recites method elements of wavelength separating, optical receiving, wavelength control and optical transmitting that substantially mirror the disclosed functions defined by the claim 1 and 13

separating means, optical receiving means, wavelength control means and optical transmitting means.

Applicant respectfully submits Lee lacks the claim 1 and claim 13 optical receiving means, wavelength control means and optical transmitting means, because Lee does not disclose, teach or suggest any performing of, or any structure capable performing the respective function defined by any of these means-plus-function elements. Lee lacks each of the claim 20 method elements for substantially the same reasons.

Applicant respectfully submits Lee lacks the claim 1 and 13 optical receiving means because Lee lacks the function defined by this element; Applicant submits that Lee's demultiplexer having a bank of filters outputting modulated signals is not a function within the broadest reasonable meaning of: "generating and outputting a reception status signal indicating whether or not each of the given plurality of wavelengths used in the" system is being received. Lee lacks the corresponding claim 20 method of element of "generating and outputting a reception status signal" for substantially the same reasons.

Applicant further and respectfully submits that Lee lacks the claim 1 and 13 wavelength control means, because Lee discloses nothing that is within the meaning of determining "an available wavelength as transmission and reception signal," on the basis of anything, much less on the basis of the reception status signal from the optical receiving means. Lee, instead discloses a conventional demultiplexer having a bank of filters. Applicant respectfully submits Lee's demultiplexer, and Lee in its entirety, does not disclose any function within the meaning of determining an available wavelength. Further, Lee does not disclose or teach toward any function within the meaning of, or equivalent to, determining an available wavelength based on any signal within the meaning of, or equivalent to, the "reception status signal" defined by claims 1 and 13, or by method claim 20.

Applicant respectfully submits that Lee lacks the claim 1 and 13 optical transmitting means (and the corresponding claim 20 method element) because,

reading Lee in its entirety, there is nothing disclosed in that reference that is a function within the meaning of transmitting an optical signal at an available wavelength determined by the wavelength control means.

Applicant respectfully submits that, for at least the reasons presented above, Lee cannot anticipated any of base claims 1, 13 and 20. Applicant therefore respectfully requests the rejection of base claims 1, 13 and 20, and their dependent claims 3, 8, 10 and 15 be reconsidered and withdrawn.

## **II. Claim Rejections – 35 U.S.C. § 103**

### **A. Claims 1 - 3, 6, 8 - 16 and 20**

The Office Action rejects claims 1-3, 6, 8-16 and 20 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art (AAPA), in view of U.S. Patent No. 6,101,014 (“Majima”). Office Action at pp. 5-16.

Applicant respectfully traverses the rejections.

As Applicant submits at Section I above, Applicant has amended the original claims, including base claims 1, 13 and 20, for form and clarity, without disclaimer of subject matter, and Applicant refers to the amended claim language in these remarks without waiver of Applicant’s traversal of the rejections of the claims as originally worded.

Applicant respectfully restates here Applicant’s statement above that base claims 1 and 13 define a system in which a plurality of remote apparatuses “communicate using a given plurality of wavelengths,” the system having, in combination with other elements, a wavelength separating means, an optical receiving means, a wavelength control means and an optical transmitting means. Each of these means-plus-function elements defines a function, and examples of each are described by the specification and drawings. Applicant’s method base claim 20 recites method elements corresponding, respectively, to functions recited by these claim 1 and 13 means-plus-function elements.

Applicant respectfully submits the AAPA lacks performance of, and lacks anything capable of performing, the recited of function of the optical receiving means, the wavelength control means and the optical transmitting means.

Stated more specifically, the AAPA remote apparatus has nothing generating “a reception status signal indicating whether or not each of the given plurality of wavelengths used in the” system is being received. Claim 1, currently amended, at lines 7-12; claim 13, currently amended, at lines 6-10.

The AAPA therefore lacks the claim 1 and 13 optical receiving means, and lacks the corresponding claim 20 element of generating a reception status signal.

Applicant submits the AAPA remote apparatus has nothing that determines “an available wavelength,” based on anything, much less based on any “reception status signal.” Claim 1, currently amended, at lines 13-15; claim 13, currently amended, at lines 12-14.

The Office Action’s position is that the AAPA “wavelength controller 240-1 to 240-m, shown in Applicant’s Fig. 1, “determines an available wavelength.” Office Action, at pp. 5-6.

Applicant respectfully submits the Office Action is in error. The AAPA wavelength controller 240-1 to 240-m, shown in Applicant’s Fig. 1, performs nothing within the meaning of “determining an available wavelength.” The AAPA wavelength controller 240-1 to 240-m simply sets the remote apparatus’ communication wavelength based on the setting entered by the maintenance persons at the time the apparatus is inserted in the system. *See* Specification at p. 4, lines 5-10.

Stated differently, the AAPA wavelength controllers 240-1 to 240-m carry out a *fixed* wavelength allocation; the controllers 240-1 to 240-m do not perform, and are not capable of performing any *control* of the communication wavelength based on detecting an available wavelength (which the AAPA remote apparatus does not detect).

Applicant respectfully submits that the secondary reference, Majima, discloses a wavelength division multiplexing system that lacks the claim 1 and

13 wavelength separating means, lacks the claims' optical receiving means, lacks the claims' wavelength control means, and lacks the claims' optical transmitting means.

Applicant submits that Majima, to the extent it can be understood, discloses a system and method having the following elements: sweeping an optical filter, setting a test transmission wavelength based on the sweep, transmitting a test signal at the test wavelength, detecting whether there is reception of the test signal and, if necessary, repeating the sweeping through another wavelength band.

Majima's system and method, arranged and constructed as Majima discloses, sweeps an optical filter 503 through discontinuous optical bands, which are within a larger range extending from  $\lambda_{Lmin}$  to  $\lambda_{Lmax}$ , looking for minimum and maximum wavelengths of detected light signals in each of these bands. Turning to Majima's Fig. 2, examples of these discontinuous optical bands are labeled "Continuous Wavelength Tunable Range #1" and "Continuous Wavelength Tunable Range #2."

According to Majima's disclosure, after the system and method detects light signals within a continuous wavelength tunable range, the control system 501 tunes the optical filter 503 to a wavelength that is spaced a predetermined distance  $\Delta\lambda$  above the maximum (or below the minimum) detected light. Majima's Fig. 2B shows, as an example, the filter 503 being tuned to  $\lambda_{Fs1}$ , which is  $\Delta\lambda$  below the minimum detected light  $\lambda_{a1}$  existing in the "continuous wavelength tunable range # 1".

Majima's system and method then tests this wavelength (e.g.  $\lambda_{Fs1}$ ) to which the filter 503 is tuned - to determine if that wavelength is a valid wavelength, i.e., if it is within the continuous wavelength tunable range having the detected light signal from which this test wavelength is spaced.

According to Majima's system and method, during the sweep of the optical filter 503 through a continuous wavelength tunable range, and detecting light

signals in that range, there is nothing performed that is within the meaning of generating any signal “*indicating whether or not each of the given plurality of wavelengths used in the transmission is being received.*”

Applicant respectfully submits that, for at least the reasons presented above, Majima cannot perform and is not capable of performing the function recited by the claim 1 and 13 optical receiving means, or by the comparable method element recited by claim 20.

Applicant further and respectfully submits that after Majima sweeps the optical filter 503 through a continuous wavelength tunable range, and detects light signals in that range, Majima has *not* yet determined whether any wavelength is “available.” Majima’s system and method *must* instead perform a further and additional step to examine whether or not the selected wavelength, spaced distance (in terms of wavelength) above or below the light signals in the continuous wavelength tunable range is valid, i.e., whether it is in the continuous wavelength tunable range.

Majima’s test step is involved, and is fundamental to Majima’s disclosure. In summary, after tuning the filter 503 to the wavelength at the predetermined distance  $\Delta\lambda$  above the maximum or below the minimum detected light, Majima sweeps the tunable semiconductor laser 502 over the entire continuous wavelength tunable range. The swept light output of the laser 502 is transmitted to the transmission line and, through an “optical confluence device” 511, to the filter 503. The wavelength control system 501 through items 506, 507 and 508, detects whether the semiconductor laser 502 output falls within the wavelength of the filter 503, e.g.,  $\lambda F_{s1}$  labeled in Majima’s Fig. 2B. The validity of the wavelength being tested is not established unless the wavelength control system 501 detects light received through the filter 503 at that wavelength.

Applicant respectfully submits that, for at least the reasons presented above, Majima *cannot* perform and is not capable of performing the function

recited by the claim 1 and 13 wavelength control means, or by the comparable method element recited by claim 20.

Applicant respectfully submits that the combination of Majima and the AAPA is not any closer to Applicant's base claims 1, 13 and 20 than the AAPA standing alone.

Applicant respectfully submits that the combined teachings of the AAPA and Majima lack the optical receiving means, wavelength control means and optical transmitting means recited by Applicant's base claims 1 and 13, and lack the corresponding method elements recited by base claim 20

Applicant further submits that the combined disclosures of Majima the AAPA disclose *nothing* showing obviousness of redesigning, re-arranging and reconstructing their respective disclosures toward any of Applicant's base claims 1, 13 or 20.

Applicant respectfully requests, for the reasons presented above, that the rejection of claims 1, 13 and 20 and their respective dependent claims 2-3, 6, 8-12, and 14-16, be reconsidered and withdrawn.

#### **B. Claims 4, 5 and 7**

The Office Action states rejection of claims 4, 5 and 7 under 35 U.S.C. § 103(a) as being unpatentable over the AAPA in view of Majima, as the Office Action applies these references to claim 1, in further view of U.S. Publication No. 2003/0118280 ("Miyazaki"). Office Action at pp. 16 -19.

Applicant respectfully traverses the rejections.

Claims 4, 5 and 7 are amended for form and clarity, without disclaimer of subject matter. Claims 4, 5 and 7 are dependent on base claim 1, and Applicant respectfully submits these claims are therefore patentable over the combined disclosure of the AAPA and Majima for the reasons Applicant submits above.



Regarding the teachings of Miyzaki, Applicant's understanding of the Office Action's position is the Office Action cites this as a reference teaching a wavelength controller at a central location.

Applicant respectfully submits that Miyazaki's teaching of a wavelength controller at a central location adds nothing to the AAPA and Majima that is material to the patentability of base claim 1.

Applicant therefore respectfully requests, for at least the reasons presented above, that the rejection of dependent claims 4, 5 and 7 be reconsidered and withdrawn.

### **C. Claims 17 - 19**

The Office Action states rejection of claims 17-19 under 35 U.S.C. § 103(a) as being unpatentable over the AAPA in view of Majima and Miyazaki. Office Action at pp. 20-25.

For purposes of form and conformance with the above amendments to the now-pending claims, claims 17-19 canceled, without disclaimer of subject matter or of Applicant's right to pursue these and other claims by one or more continuations based on the present application.

Applicant respectfully restates, for the record, Applicant's statements above that base claims 1, 13 and 20 are patentable over the combined disclosures of Majima, the AAPA and Miyazaki, under 35 U.S.C. §§ 102 et seq.

### **Conclusion**

In view of the foregoing, Applicant respectfully requests that the application with claims 1-16, 20 and 21 be passed to issue. Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Laurence E. Stein', written over the typed name.

Laurence E. Stein

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